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May 13, 2010
Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: *Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band (WT Docket No. 07-293) and Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band (IB Docket No. 95-91)* -- WRITTEN EX PARTE PRESENTATION

Dear Ms. Dortch:

Alcatel-Lucent submits this Ex Parte in response to the staff's April 2, 2010 *Public Notice* inviting comments on draft interference rules governing the 2.3 GHz band Wireless Communications Service ("WCS") facilities and Satellite Digital Audio Radio Service ("SDARS") facilities.[1]

Alcatel-Lucent's market leadership and experience in broadband provides unique insight into policy prescriptions for the broadband era. Alcatel-Lucent, as the leading provider of broadband access solutions worldwide, is deeply involved in the research, development, standardization and production of many innovative wireless networking technologies. Specifically, Alcatel-Lucent has participated extensively in standards-making processes through organizations such as the 3rd Generation Partnership ("3GPP") and the International Telecommunication Union ("ITU") to develop the technologies that

[1] *See* Commission Staff Requests That Interested Parties Supplement The Record On Draft Interference Rules For Wireless Communications Service And Satellite Digital Audio Radio Service, Public Notice, DA 10-592 (rel. Apr. 2, 2010) ("*Technical Public Notice*").

could potentially be deployed in the WCS band, specifically WiMax and LTE supporting both frequency division duplexing ("FDD") and time division duplexing ("TDD").

I. Alcatel-Lucent Supports the Commission's Efforts to Enable Wireless Broadband Deployment in the 2.3 GHz Band and to Address Interference Concerns with Adjacent License Holders.

Alcatel-Lucent applauds the Commission's National Broadband Plan goal of allocating significant amounts of spectrum over the next 10 years to address the growing data demand in the wireless broadband marketplace. However, Alcatel-Lucent shares the concerns of multiple parties in the proceeding that the proposed technical requirements in the draft interference rules could negatively impact the National Broadband Plan's goals for wireless broadband by discouraging, rather than encouraging, efficient investment. As the Commission's National Broadband Plan recently observed, "global harmonization across spectrum usage, along with international standards-setting, can reduce per-unit costs and lead to increased adoption and usage of the Internet around the world."[2] While Alcatel-Lucent understands the interference concerns of the adjacent licensees, it is imperative that the Commission not supersede the years of work conducted by standard bodies to identify technologies suitable for wireless broadband in globally harmonized bands.

II. Alcatel-Lucent Supports the Proposed Guard Bands and OOBE Limits as a Remedy to Interference Concerns.

Alcatel-Lucent believes that, even without the adoption of duty cycle limits, the Commission has provided appropriate protection for the mitigation of interference into SDARS operations by adopting restrictions on out-of-band emissions ("OOBE") into the 2320-2345 MHz satellite band and by not permitting mobile and portable stations to

[2] Connecting America: The National Broadband Plan 60, *available at* http://download.broadband.gov/plan/national-broadband-plan.pdf.

operate in the 2317.5-2320 MHz and 2345-2347.5 MHz. Alcatel-Lucent believes that focusing interference protection on these OOBE limits and the 2.5 GHz guard bands provides for the greatest flexibility for WCS providers to deploy their technology of choice to meet the growing demand of the wireless broadband marketplace. The Commission should rely on these OOBE restrictions and guard bands to address the interference issues and only consider other remedies, such as duty cycle constraints, in the event OOBE limitations and guard bands are proven insufficient.

III. Alcatel-Lucent is Concerned that the Duty Cycle Limits May Trump Technology Flexibility and the International Standards Process.

Alcatel-Lucent is concerned with the proposed duty cycle limits on mobile TDD and FDD technologies operating in the 2305-2320 MHz band or the 2345-2360 MHz bands[3]. By imposing the duty cycle limitations, the Commission is departing from the longstanding principle of technology neutrality by restricting the flexibility of WCS operators to deploy LTE technologies in favor of WiMax. The 2.3 GHz band has been globally identified by the ITU at its World Radiocommunication Conference in year 2007 for use by mobile terrestrial service.[4] Currently two globally standardized technologies can be deployed to provide wireless broadband services in the WCS band: IEEE 802.16e ("WiMAX") and LTE, both FDD and TDD.

Alcatel-Lucent agrees with Ericsson that the draft rules were apparently drafted from the perspective of WiMAX 802.16e and, as a result, they do not take into account

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[3] *See* Commission Staff Requests That Interested Parties Supplement the Record on Draft Interference Rules for Wireless Communications Serv. & Satellite Digital Audio Radio Serv., WT Dkt No. 07-293 et al., Public Notice, DA 10-592, at 9 (rel. Apr. 2, 2010) (proposed 47 C.F.R. § 27.50(a)(1)(iii) and § 27.50(a)(3)(i)) ("*Technical Public Notice*").

[4] *See* ITU Regional Radiocommunications Seminar, *Results of WRC-07, Bringing it Al Together* (April 14-18, 2008), *available at* http://www.itu.int/ITU-R/space/support/workshop/doc_presentation_en/WRC07%20results_FL.pdf.

certain features of the standards for LTE, both FDD and TDD. In addition to Ericsson's concerns about accommodating the LTE-TDD 43.3% duty cycle[5], Alcatel-Lucent notes that the proposed limitations on FDD duty cycles effectively could preclude LTE-FDD in the band. The current LTE-FDD standard affords licensees maximum flexibility by not including duty cycle limitations. The Commission's proposed 12.5% duty cycle will limit the flexibility of the standard, resulting in substantially lower data carrying capacity in the uplink of a potential LTE-FDD network deployed in the WCS band. The Commission should refrain from imposing duty cycle limitations to allow the greatest flexibility for WCS operators to maximize network efficiency and capacity.

Moreover, it is essential that the Commission reject the proposal by Sirius XM Radio Inc. to preclude mobile transmission during every other frame. In the case of WiMAX 802.16e, the frame duration is 5 msec, while for LTE-TDD it is 5 or 10 msec, depending upon configuration. In the case of LTE-FDD the frame is 10 msec. The FCC should endeavor to accommodate these and other evolving frame structures as the state of the art technologies in the wireless industry advance. Requiring that mobile devices remain silent during their allocated transmit subframe every other frame as proposed by Sirius XM would cut the uplink speeds in half. Sirius XM's proposal is not supported by any standard technology currently in existence. Uplink/downlink ratios are established at the network level, and current standards-based systems do not allow for control of individual mobile devices in the manner that would be required to implement Sirius XM's proposal.

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[5] *See Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band*, WT Dkt No. 07-293, Comments of Ericsson at 4-5 (filed Apr. 22, 2010).

IV. Alcatel-Lucent Agrees with Multiple Commenters that the Proposed Spectrum Restrictions of Base and Fixed Stations Using FDD Technology Will Negatively Impact Current Network Deployments.

Alcatel-Lucent endorses the concerns expressed by the WCS Coalition, AT&T and Stratos Offshore Services Company that the Commission should not bar point-to-point FCC operations from the 2305-2320 MHz segment of the WCS band. By restricting FDD technology transmission to the 2345-2360 MHz segment of the WCS band the Commission's rules would have a direct impact on networks that were deployed based on the Commission's rules permitting WCS operations in both the 2305-2320 MHz segment and the 2345-2360 MHz segment. Alcatel-Lucent agrees with the WCS Coalitions proposal in Appendix A of their Comments and Stratos' proposed amendment to the Commission's draft Section 27.50(a)(1)(iii). However, if the Commission follows through with its proposal in the draft rules to prohibit point-to-point FDD technology in the 2305-2320, Alcatel-Lucent endorses the WCS Coalition and AT&T's request that at a minimum the Commission should grandfather existing FCC point-to-point deployments constructed prior to the adoption of new technical rules, particularly since no one has complained on interference from such links.

V. Conclusion

Alcatel-Lucent appreciates the hard work of the Commission staff in this proceeding, and its efforts to enable more spectrum for mobile broadband usage. Instead, Alcatel-Lucent issues caution with the precedent set in these draft technical rules. Alcatel-Lucent is concerned and requests that the Commission first deploy the guard band solution to address the interference issues, and then subsequently return to the duty cycle regulations in the event that the guard bands are proven to be inadequate to address

the interference issues. The Commission has set a high standard of technology neutrality for global regulatory bodies to follow, and Alcatel-Lucent urges the Commission to continue this leadership position.

Respectfully submitted,

ALCATEL-LUCENT

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